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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,970	12/11/2003	Theodore W. Houston	TI-35974	8532

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EXAMINER

PHAN, TRONG Q

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

8/✓

Office Action Summary	Application No. 10/732,970	Applicant(s) HOUSTON, THEODORE W.	
	Examiner TRONG PHAN	Art Unit 2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-16 and 18-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature as recited in claims 11 and 23 (it should be noted that Fig. 4 of the present invention does show that V_{nwell}, V_{pwell} and the voltage across the SRAM cell V_{ADD} – V_{ASS} are not the same voltage) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 6-16 and 18-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Deng et al., 6,925,025 (it should be noted that there is another inventor Xiaowei Deng as set forth in item (1) of 35 USC 102(e)).

Deng et al., 6,925,025, discloses in Fig. 1 a SRAM device comprising:

Regarding claims 1, 6-7, 14, 18-19, 24 and 28-29:

SRAM array 110;

immediate column peripheral circuitry 152;

sleep mode power down voltage controller 170 may include a diode-bridged header or a low drop-out (LDO) voltage regulator to regulate a high supply voltage VDDM of 0.9V that is lower than high operating voltage VDD of 1.2V by a voltage drop across the header-diode 125 and a low supply voltage VSSM of 0.3V that is higher than low operating voltage VSS of 0V by the voltage drop across the footer-diode 129 (see lines 58-63, column 5 and lines 17-35, column 6) provided to SRAM array 110 during the sleep mode; wherein: sleep mode power down voltage controller 170 **must provide concurrently** the high supply voltage VDDM the low supply voltage VSSM to SRAM

Art Unit: 2827

array 100 during the sleep mode in order to establish the boundary in the SRAM device which is an interface that occurs between two different voltage domains (see lines 52-53, column 3); and based on the design choice, each of the a diode-bridged header in the sleep mode power down voltage controller 170 may be a p-channel MOSFET and each of a diode-bridged footer in the sleep mode power down voltage controller 170 may be a n-channel MOSFET (see lines 8-10, column 6) which transistor parameters of these p-type and n-type MOSFETs are different such as size, width/length (W/L) ratio, threshold voltage V_{th} , polarity etc.;

Regarding claims 2-4, 8-10 and 15-16:

n-well voltage at about high operating voltage VDD of 1.2 V (see lines 30-34, column 6);

Regarding claims 9-10, 21-22:

sleep mode current (see lines 56-67, column 3; line 28, column 7; lines 37-38, column 8);

Regarding claims 12-13 and 25:

retention data (see lines 30-31, column 2);

Regarding claims 11 and 23:

power down voltage controller 170 providing the same n-well bias (see lines 41-42, column 6) at 1.2 volts for the n-well of the SRAM array 110 (see lines 31-34, column 6) and the voltage across the SRAM cell can be decreased to 1.2 volts (see lines 22-28, column 6).

Regarding claims 3 and 27:

the low supply voltage VSSM increases from the low operating supply voltage Vss to a

Art Unit: 2827

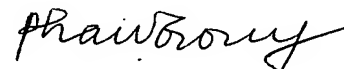
voltage having a value equivalent to V_{ss} plus the voltage drop across the footer-diode 129 (see lines 24-28, column 6) and since the SRAM array 110 does have n-well, therefore, it also inherently must have a substrate at a voltage which also inherently must be equivalent to the low operating supply voltage V_{ss} as well known in the art.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRONG PHAN whose telephone number is (571) 272-1794. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, AMIR ZARABIAN can be reached on (571)272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**TRONG PHAN
PRIMARY EXAMINER**